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Editorial comment

Iain Scott works within the Edinburgh School of Architecture and Landscape Architecture (ESALA), UK. This paper describes a week-long project to design the ideal classroom undertaken by 12 secondary-aged pupils on the autism spectrum from Kaimes School in Edinburgh. The project was run by the author with 10 students from the School of Architecture at Edinburgh College of Art and ESALA. ESALA is the newly formed Edinburgh School of Architecture and Landscape Architecture created through an alignment of programmes previously offered separately by The University of Edinburgh and Edinburgh College of Art. The students employed projective techniques and established methods of analysis to help understand the core meanings and concerns contained within the work of the children. The paper proposes that as with all building users, children with autism should not be excluded from the process of designing buildings to address their physical and psychological needs.

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Introduction

In May 2009, I published a paper entitled 'Designing Learning Spaces for Children on the Autism Spectrum' in this Journal. The paper reviewed the existing knowledge in relation to designing for autism, to establish which criteria were being used by Architects and Health Professionals involved in the briefing and design process for new autism classroom spaces. I then went on to case study three new units and a school for autism to see how these criteria were applied in practice and to establish any new and innovative approaches to the subject.

Recent research by Jenkins and Forsyth (2010) has examined different ways in which architectural design could actively involve the end participant in the briefing and design process.

> *'Recommendations for the profession are: To stress the importance of user and social participation in the brief development and design stages of the professional plan of Work … To promote the role of social engagement with architecture in education and continued professional development – including participatory skills training.'* (Jenkins and Forsyth, 2010, p. 164–165).

It became very clear from the above paper that what was missing was an attempt to involve the children on the autism spectrum in the process and to interpret their needs and desires in relation to the spaces being designed for them. This paper attempts to address this deficit by recording and analysing a week long project undertaken by secondary school children on the autistic

spectrum working with students from the School of Architecture at ESALA and Edinburgh College of Art.

The strategies involved included a projective technique designed within the framework of Personal Construct Psychology (PCP), (Kelly, 1955). Architectural interest in PCP originated in the 1970's specifically when Stringer (1970; 1976) explored people's perceptions of shopping centre developments using the technique. PCP attempts to elicit wishes and desires which may exist at a subconscious level in relation to the experience of places and environments.

Informed by this, the pupils then did drawings and made architectural models of their ideal classroom which were then analysed to interpret the meanings contained within the children's work. There exists a large body of academic work in relation to interpreting children's drawings, some of it autism-specific (Brooks, 2004; Kellman, 2001). No such body of work exists in relation to model-making by children, although this is a primary method of visual communication employed and interpreted by students of architecture.

Lastly, based upon the knowledge gained from the project, each student completed their own design for the ideal classroom on the same site, (an existing basketball court next to the school), including a post-design appraisal of how the design had been informed by the work of the children. In the interests of brevity, this paper will focus principally on the week long project and will provide an analysis of the output of the children who took part.

Background to the project

The project was undertaken at Kaimes School in Edinburgh during one full week of February 2010. Kaimes is a school for children and young people who have problems in the area of social communication, social interaction and flexibility of thinking. Most of the pupils have a diagnosis of Autism Spectrum Disorder. Two classes involving twelve pupils; (11 male and one female), aged 13–15 years, were assigned to work with ten students from the Architecture and Well-Being Post-Graduate Diploma Unit.

The students were joined by a post-graduate student working on a separate research project into 'Designing for Autism' at the University of Edinburgh. The author was also actively engaged in the project, allowing the children to receive 'one to one' support throughout the week. Prior to the week-long exercise, the architecture students were introduced to the theories of Personal Construct Psychology (Kelly, 1955) and frameworks for the analysis of children's drawings (Brooks, 2001; Kellman, 2004). They were also provided with literature sources to familiarise them-selves with the condition of autism and to digest available published material on autism and environment, including the work of the author.

Methods

1. Personal Construct Psychology (PCP)

It was agreed, as suggested by Aspinall and Ujam (1992) that our role would be to elicit children's ideas of place and at no stage to suggest design alternatives. A related objective was the educational one using techniques that would facilitate and stimulate thinking and discussion necessary to the design process rather than in producing the final design proposal

PCP techniques can be used to elicit desires and wishes in relation to environmental experiences which may exist at a subconscious level. They can be applied by designers to explore the desires and concerns of clients which may go unstated in the brief for a proposed design. The basic premise of PCP is that our perceptions of the world are processed through a system of individual constructions rather than a first-hand interpretation of reality as found. These 'reality constructions' mediate our understanding of the world and form the basis for our subsequent decision-making. Each person uses their own 'construct system' to filter and interpret their experience. Kelly's theory outlines the properties of the construct system and its attendant repertory grid methodology allows for an individual's constructs to be defined and quantified. In attempting to elicit someone's 'system of constructs' the key terms are elements and constructs. Elements are the objects, situations or people upon which our constructs operate. The constructs are the features or qualities which distinguish elements from one another. Constructs are discriminatory and operate between established 'poles'. So, in interpreting environmental qualities, we place these qualities somewhere along an axis between these polar extremes. Dark or light, open or closed etc. Lastly, systems of constructs are hierarchical with the fundamental 'core constructs' of any person's system being at the top of the hierarchy. The use of a picture-based assessment is a common technique in PCP and

was employed here as an appropriate method given the children's familiarity with other picture-based methods, (eg TEACCH, PECS and ABA among others). PCP is also being increasingly applied in producing personal construct assessments of adults on the autistic spectrum (Hare, Jones and Paine, 1999).

2. Drawing and model-making analysis

Allen (2009, p. 539) cites a number of studies and states that:

> *'The drawing skills of children with autism appear to be unimpaired relative to age matched typical peers (Charman and Baron-Cohen, 1993; Eames and Cox, 1994), although differences are evident in drawing style. Children with autism produce an overlap in pictures of humans but not non-humans (Fein et al, 1990) and have difficulty in producing distinctive drawings of humans, but not houses* (Lee and Hobson, 2006)'.

There exists a considerable body of work which reflects a growing interest in the interpretation of children's drawings as an educational, 'meaning–making' tool. Historically, analysis of children's drawings derives from two key discourses; Piaget's Developmental Learning theory and theories of Aesthetics (Piaget, 1956). These built on (Laquet's, 1927) 'Stages of Drawing' theory arguing that drawing provides a window into the child's cognitive development. This subsequently led to analyses of drawing techniques as 'benchmarks' for children's cognitive development (Kellogg, 1969). Aesthetics theory as developed by Taunton (1982) and Smith(1989) focuses on essentially abstract ideas of aesthetic beauty in children's drawings as often demonstrated by their primal simplicity and lack of self-consciousness.

Brooks (2003, p. 41) argues that:

> *'Aesthetics does little to address the many real problem-solving and meaning-making activities that are inherent in the process of drawing for young children'.*

Also, in recent years there has been a shift from a de-contextualised, psychological focus on children's drawings towards an increased interest in children's meaning-making through drawing, and a focus on the socio-cultural contexts of drawing activity (Anning, 2003).

Brooks (2003) proposes the use of a Vygotskian theoretical framework for interpreting children's drawings. Vygotsky (1962;1978) saw learning and development co-existing in a socio-cultural and historical process that operated on three levels. The first being the interactive level where children gain understanding through their immediate interactions with people and objects. The second is the structural level where knowledge is gained and filtered through interaction with social structures such as the classroom or family. The third level is the 'global' cultural level where interaction with social, historical and cultural phenomena shape the way children learn within their own established culture. Brooks argues that the learning environment for any drawing task should reflect these three levels of social context, allowing for discussion and analysis of the drawing process and content to be made with reference to all three levels. This framework was adopted for the purpose of analysing both the drawings and models of the children and for reflecting upon the process of drawing and meaning-making itself and the attendant discussions with the children. The learning environment for the drawing and modelling tasks was structured thus:

1. The children worked alongside a member of the student group and at a table beside one other pupil and student. They interacted with other individuals of this small group and with the materials for the task in constructing their ideas. Students were encouraged to observe the drawings as they were produced and to interview the subject with open-ended questions.
2. The children were able to filter and test ideas through their discourse with this small group of peers and adults. Upon completion of both the drawing and modelling tasks, a collective 'review' session was conducted which allowed proposals to be the subject of a critique by the whole group. On the final day of the project the children's parents were invited to a presentation and celebration of the work of the week at which parents were actively encouraged to discuss the work with their child and co-workers.
3. By taking the children out of the classroom and into the exterior environment the children were able to engage with 'the world' and its phenomena. Discussions on site with the children included the impact of nature on their proposals (eg. What direction does the sun come from?). Also the children had wider cultural and social influences which it was

interesting to see them bring to and interpret through a design project.

Kellman (2004) emphasises the use of 'drawing systems' in the art of children with autism. Her definition of a drawing system is the means by which the person drawing describes three-dimensional space and the objects residing within it. Children with autism are known to combine different geometric techniques within the one drawing and Kellman is interested in the drawing systems utility for the child as an image maker. She sees the often multiple drawing systems employed by autistic children as:

> *'... manifestations of various grammars that continue to be exploited as an image's purpose warrants it'.* (Kellman, 2004, p. 16).

Furthermore:

> *'Drawing systems emphasise spatial relationships and structural concerns, a useful strategy considering the fact that young artists with autism frequently focus on the geometrical structure of a visual scene and on the forms and structures of objects themselves in their drawings'.* (Kellman, 2004, p. 16).

Analysis of the children's drawings was carried out by the author based upon the written reflections of the students.

Day 1

The first day involved the children in a visit to Edinburgh College of Art where they were given a short slide presentation on the work they would be engaged in. They were also introduced to the work of the students through a tour of the architecture studios and visited an exhibition in the college sculpture court. During the afternoon the group visited the Museum of Scotland where they were engaged in a simple task to decide on a favourite building element (eg stair, window, display case, etc) and to draw it to the best of their ability. The principal purpose of the first day was to engage the pupils in an original social and educational experience, to allow the children and students to get to know one another and introduce the children to the week-long task. The rest of the week was spent working at their school.

Day 2

The timetable for Days two, three and four included a morning session from 9.30am until noon, with a half-hour break from 10.30 until 11. The afternoon session ran from 1pm until 2.30pm. Students were encouraged to be sensitive to the needs of each individual child and to allow them to take a break from working as and when required. The site for the project was an existing basketball court outside the main school building. It was felt that this 'real-life' context would help the children to envisage an intervention, rather than attempting to imagine their 'ideal' classroom in no particular place. However, some of the children had difficulty in understanding the concept of an imaginary design project, sited in a real location which they knew well. During the morning of Day two, site information was gathered through dimensioning, sketching and taking photographs. (See *Figure 1*.)

Materials for making architectural models had been collected by pupils, staff and students in the weeks

Figure 1: Site visit on Day 2 and garden model.

leading up to the project allowing the children to have access to a rich assortment of colours, materials and textures. Each child was given an A3, MDF board, (roughly the same dimension as the basketball court at 1:50), to use as a base. In order to allow the pupils time to experiment with model-making and to gain confidence in working with the materials provided, the afternoon of Day 2 was spent making a design for a garden on the site. (See *Figure 1*.) This also had the added advantage of illustrating to the pupils the imaginary nature of a design proposal. Pupils were each paired up with a student and were organised at working tables within two adjoining classrooms. Two pupils and two students were assigned to work at each table. This allowed students to work alternatively with two different children over the course of a session. Pupils were therefore able to share their ideas within a small group. At the end of each session, on Days two, three and four the entire group gathered together around all of the displayed models and drawings to allow the children to present their proposals and generate a wider discussion amongst the full cohort. (See *Figure 2*.) This allowed the children to take stock of what they had created and learned.

> *'In this way learning is not an end in itself but rather a way of participating in a social event to master new knowledge. Knowledge is not simply factual, but is also knowledge that grows out of socially and personally meaningful explorations and questions formulated by and amongst the children'* (Brooks, 2004, p. 45).

Figure 2: Daily review session

Day 3

The morning of Day 3 was used to implement the projective technique of PCP to elicit the children's feelings about aspects of environment and space.

Students and pupils worked on a one-to-one basis for the full morning. Prior to the week of the project, students worked with the author to design the form and content of the PCP strategy. Pupils were presented with ten different sets of three images arranged horizontally and depicted in black and white. Each set of images was chosen to represent different aspects of environment and place which are considered to be important in designing for autism, such as ordered spatial structure, legible way-finding, security and independence, simple detailing etc. (Scott, 2010; Beaver, 2006). The children were then asked to select their favourite image from each set and expand on their reasons for that selection, explaining:

a) What they liked about it and why? (2 reasons).

b) What they did not like about it and why? (1 reason).

c) What would they like to do if they were there?

d) How could it be better?

e) Any other observations?

The questions were designed to elicit elements and constructs within three main categories. These were spatial experience, activities and design features (Aspinall and Ujam, 1992). During the evening of Day 3, each student made up a storyboard of their pupil's chosen images complete with some of the key constructs elicited from the questionnaire. This was then made available to each pupil during the model-making task for the following day, to form a basis for discussion on preferred elements to be included in the class-room design.

The afternoon of Day 3 was spent drawing the ideal classroom. As before, students worked with children in pairs, discussing their ideas throughout the drawing task. At the end of the session a review session was conducted where the children presented their drawing to the entire class and a discussion was conducted by the author of the ideas contained therein. The focus of discussion was about the meaning and information it contained rather than on drawing skills and aesthetic qualities.

Figure 3: Storyboard of PCP survey choices.

Day 4

Based upon the drawings the children had completed, the children spent the day making models of their 'ideal classroom'. As before, students observed the work of the pupils on a one-to-one basis in groups of two, continuing to discuss their design proposals which were now three dimensional. For almost all of the children the model became an attempt to directly replicate the elements contained in the drawing in three dimensions. Once again at the end of the session a review of the work was conducted. As Davis (2005) maintains, it is important to talk to children about their creations in order to fully understand their interests and intentions.

Day 5

Students spent the evening of Day 4 assembling a Powerpoint presentation reflecting the work of the week. This encompassed images from the visits on Day 1, and the visit to the site on Day 2. The work of each child was then presented in sequence showing the results of the PCP exercise, the garden model, and drawings and models of the ideal classroom. Parents were invited to the school for the presentation and celebration of the work. Students verbally presented the work of each child to a group including the pupils, students, parents and teaching staff. Following this there was an opportunity for the children and parents to discuss the work informally with the author and students.

Analysis of the PCP strategy

The responses given to the questionnaire were sorted into three categories: aspects of place experience, activities and design features. The frequency of each element or construct repeating was recorded as a way of eliciting broad concerns which affected the group as a whole. Fundamentally of interest to the author was the relationship of these concerns to the summary of design criteria available to architect's designing for children on the autism spectrum. The criteria interpreted from a multiplicity of sources are as follows:

A. *'The requirement to provide an ordered and comprehensible spatial structure.*
B. *The requirement to provide a mix of large and small spaces.*
C. *The requirement to provide increased control of the environmental conditions to the user.*
D. *The requirement to provide for different, autism specific teaching methods.*
E. *The need to balance security and independence.*
F. *The need to provide simple and reduced detailing.*
G. *The requirement for the end user to be actively involved in the brief-building and design process.*
H. *Appropriate use of technology to aid the autistic learning experience.*
I. *Appropriate technical specification'.* (Scott, 2009, p. 41).

Firstly, with reference to criterion G, this paper is intended to outline a projective method for designers to engage with the child with autism in eliciting their concerns and desires in relation to the environments

designed for them. The requirement to provide for different, autism specific teaching methods and appropriate technical specification are criteria which are difficult to interpret through a survey of this nature and do not form part of the analysis here. Tables for each of the three categories are contained in Appendix 1.

A. The requirement to provide an ordered and comprehensible spatial structure was clearly reflected in the responses of the group as a whole. In the 'Aspects of Place Experience' category, one of the most popular constructs was the desire for tidiness and order. Another construct was a preference for spaces to be 'un-confusing'. One child in commenting on a particular image stated it was, "Too confusing, a cat could get lost"! References were also made to emptiness, bare walls and space to walk around which all can be interpreted as reflecting a desire for spatial and environmental simplicity. In the Design Features category, one child requested clear signs to help find your way around.

B. The requirement to provide a mix of large and small spaces was also broadly reflected in the 'Aspects' category. Two children in particular stated their opinion that small spaces were good and large spaces bad. The need to be alone and have quietness was also expressed as was the desire to sometimes be in a different space to the teacher. In the 'Activities' category, one child in particular expressed a liking for, 'hiding but not spying'. In contrast to this, pupils also expressed preferences for space to walk around and things to be 'light and airy'.

C. The requirement to provide greater control of environmental conditions to the user is interpretable through the children's preference for a multitude of different environmental conditions. Light and airy/cosy were both popular constructs expressing opposing conditions. The need for sunlight and brightness was expressed by many as was the desire for darkness which was seen as a positive condition. Quietness was also communicated alongside the desire for music and sounds.

D. The need to balance security and independence. The need for a direct relationship to the world outside the classroom is possibly the most significant finding from the survey. It is clearly reflected across all three categories with high frequency. All the children who took part expressed a clear desire to have a relationship with the world outside the class-room through 'Views to the outside (18) and 'views of sky/clouds' (6). The most preferred design feature was 'big windows' (19). Preferred activities included running outside, picnicking, playing football and basketball, dancing, looking at trees, climbing and sitting on the grass, whilst preferred 'Design Features' included trees, water, flowers and plants. All this clearly supports the premise that:

> *"… whilst a secure out of doors environment is desirable for all children it is particularly pertinent to children with ASD'.* (Scott, 2009, p. 40).

E. The need to provide simple and reduced detailing. Many of the children expressed a desire for visual simplicity and a disdain for clutter which would support designers pursuing a more minimal approach to the detail design of spaces for children with autism. More than one child expressed a liking for rectangles as a clear and understandable geometry over more complex forms. Bare walls, tidiness and clean surfaces were other preferences within the 'Aspects' category. Drawers and cupboards were chosen on more than one occasion as an important design feature to improve tidiness.

F. The use of technology to aid the autistic learning experience. Computers, lap-tops, smart boards and a plasma screen were all cited as important design features within the 'Ideal Classroom'. Clearly these are technological instruments which are readily known and accessible to almost all of the children interviewed. Two separate children also expressed a desire for the classroom to be modern and futuristic. The desire of the children to engage with the world outside the classroom as clearly expressed by the survey is a challenge for designers which could also be met through the innovative use of technology as employed by Wigglesworth at Mossbrook in Sheffield (Chiles, 2003).

Overall, the criteria stated above appear to be reflected in the concerns of the children as elicited by the survey. Relationship to nature is clearly a key concern of children with autism which was reflected with the highest frequency within two of the three categories. The 'Aspects of Place Experience' category appears to have been the most illuminating of the three, with a strong hierarchical order reflecting relationship to the outside, lightness and airiness, geometric simplicity and tidiness

in that order. The 'Activities' category interestingly communicates no such hierarchy within the group but appears simply to reflect the diverse set of physical activities enjoyed by the participants. Many of the children found it difficult to 'imagine' them-selves pursuing activities in any kind of spontaneous way as suggested by a particular environment and fell back on particular favourite physical pursuits unrelated to the chosen image. It would certainly appear that this is a difficult category within which children with autism can meaningfully express themselves. The 'Design Features' category also contained a strong hierarchy, with furniture and lighting being of particular concern after the need for 'big windows'.

Analysis of the drawing and modelling task

The pupils all displayed different skills and abilities in both the drawing and modelling tasks. All of the drawings produced contained aspects of various geometrical systems being employed. Some children employed the elevational method of placing elements along a baseline, each with the inherent hierarchy of important elements being placed in the centre of the image and less important elements to the outside. Each pupil also used elements of perspective to render particular objects in three-dimensions. Overlapping of objects was universally unpopular and each element chosen needed its own 'personal space'.

One pairing of pupils both implemented the same geometric drawing convention of drawing a plan with the walls of the space 'folded down' to allow a more three-dimensional rendering to be achieved. This then allowed those pupils to depict a more complex series of spaces 'from above'. This illustrates clearly the second level of the 'Vygotskian' framework where ideas are discussed and transferred within the small working group. In the example shown (*Figure 5*) the pupil demonstrates a desire for a series of spaces including an art room and 'punishment room' complete with a violin and some maths books. There is also one further additional room to allow the child to be alone, containing favoured elements such as a sofa, bed, television and 'Nintendo Wii'. This room is depicted as outside the envelope of the main space, emphasising its importance and separateness.

Most children struggled to imagine what else could go into a classroom, beyond what their cultural and institutional associations said they already knew a classroom to be. It appears in certain instances that the existing school environment was a powerful 'frame of reference' for each child's proposal. The plan drawing in Figure 5 clearly illustrates this. When the pupil was asked if they would like to have access to the outdoors this was incorporated by the introduction of a corridor, rather than being achieved more directly by an opening direct from the classroom space to the outside. Beyond this, each child depicted their own favoured elements usually with reference to a favoured theme such as Dr Who, James Bond and Top Gear. Discussion around the incorporation of qualities from the PCP survey proved difficult with the exception in one or two instances of particular elements chosen during the questionnaire, (wooden roof beams and a large open air canopy), taking their place in the drawn depiction. In all of the drawings of the classroom the image is one of the inside

Figure 4: Drawings of the ideal classroom.

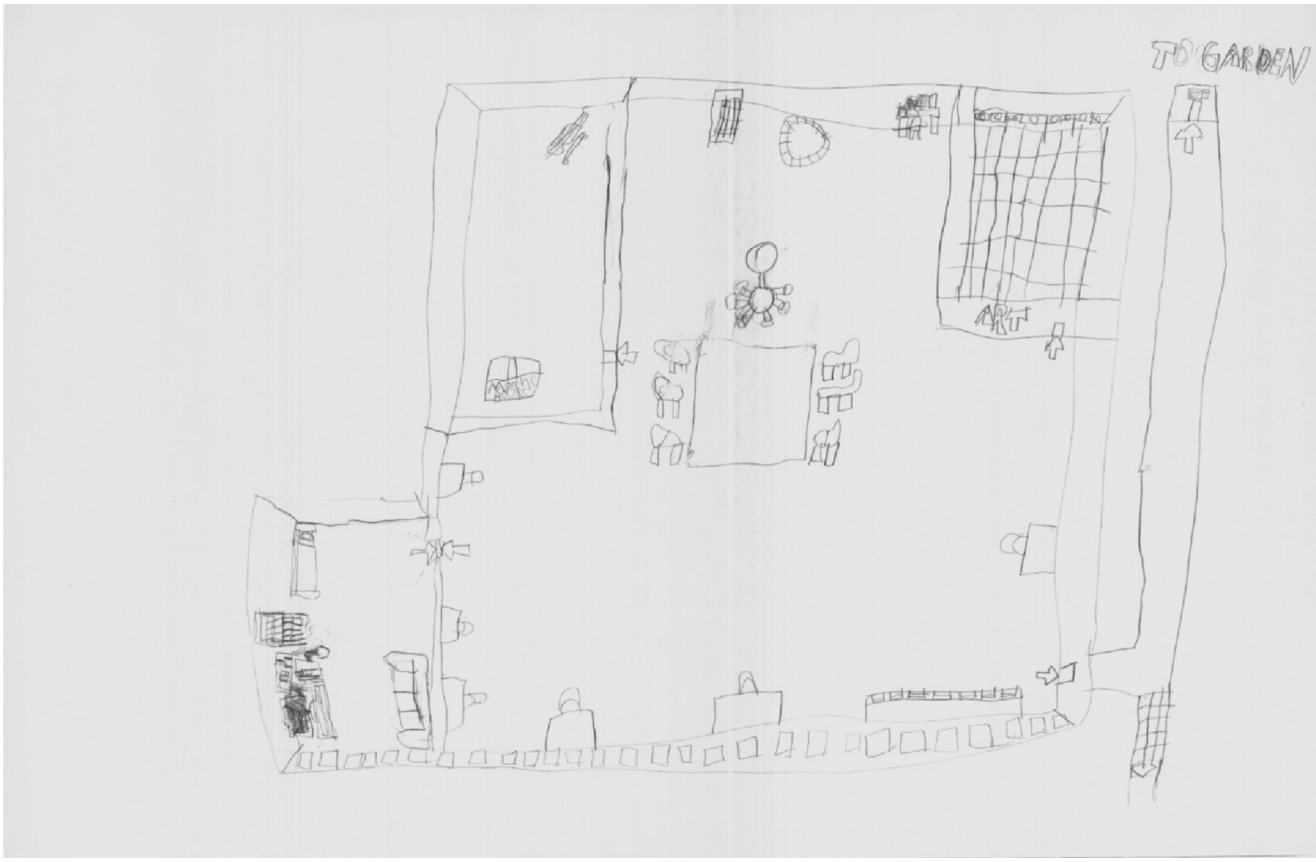

Figure 5: Folded wall plan drawing.

of the space only, though each child does include openings as an important element often rendered with views of the sky, a garden or the city.

Each of the children found great difficulty in imagining space and so in almost every instance the drawing became a template for the model making of the ideal classroom.

All of the pupils were interested in the opportunities afforded by using different materials to impart different qualities to elements within the space. They then realised

Figure 6: Models of the ideal classroom.

that by placing elements within the main space, a series of different zones could be created. Concern for any three-dimensional qualities of the envelope were dismissed by each child as unimportant, clearly indicating that all of the pupils made little or no connection between space created and the resultant object. Pupils did find it easier when working on the model to determine the proportion of objects in relation to one another than they did in completing the drawing task.

Student presentations of the ideal classroom

All the students prepared an analysis of the drawings and models produced by the children to identify consistent themes, environmental preferences and design elements. Using the knowledge gained from the work with the children the students then produced drawings and models of their own design for the ideal classroom on the same site. Lastly each student completed a post-design analysis of their proposal, highlighting key design features and their relevance to designing for autism. Student feedback in relation to the project was extremely positive.

> *'Doing the project gave me an insight into autism and the requirements of spaces that encourage positive development in the children. I learned the importance of understanding the way the children will experience and use a space and hopefully how to make a contribution to their development and independence'.* (Richard Esono-Suguitan: ESALA M.Arch 2.)

Figure 7: Ideal classroom proposal. R. Esono-Suguitan; ESALA M.Arch 2.

Concluding comments

The project had a number of key intentions. Firstly, to introduce those involved to a teaching model for children to learn about space and architecture. The model was designed to allow the child with autism a gradual but comprehensive introduction to the subject but could easily be used as an educational model for introducing school-children generally to the subject of environmental design. Chiles (2003) highlights the difficulty of engaging children in a subject they have not previously been taught. Clearly, this could be achieved over the course of a one week intensive project or in an extrapolated way by stringing each phase of the design process out over the course of a number of weeks. From the feedback received from students, teachers and parents of the children involved, the week was an intensely rewarding and educational experience for everyone.

Another key driver was the objective of discovering the key concerns of the child with autism in relation to the spaces they inhabit and if the criteria which are available to architects designing new classroom facilities were broadly supported by these concerns. It appears clear from the data collected that these concerns are broadly reflected by the cohort of pupils who took part. Key aspects of the criteria such as access to nature, large and small spaces, views to the outside, order and clarity and the incorporation of technology are all clearly discernible from the material output of the children.

Finally, it is universally acknowledged that designers should engage with the users of their buildings as a way of discovering their needs and concerns during the brief-building process. Active engagement with children through some form of preparatory design project has been attempted before, most notably through the 'Schools for the Future Project' in Sheffield, 2002. However without a clear model for analysing particular outputs of the participants it becomes difficult to meaningfully interpret the results of any project. As Chiles (2003) points out:

> *'Too much un-prioritised or over-abstract information can be very difficult to absorb effectively. A carefully thought out method of communication between all parties is imperative for the effective transfer of information from user to professional.'* (p. 250)

This model could be used as an effective tool for discretely eliciting design choices and intentions not only

from children with autism but from children and adults in general.

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Appendix 1: Data from the PCP technique

Aspects of Place Experience	Frequency
Emptiness	1
Shapes (rectangles)	3
Being Alone	3
Bare walls	3
Tidiness (Order)	6
Clean surfaces	2
No teachers (Teacher in a different place)	2
Views to outside	18
Darkness (positive)	2
Sunlight/brightness	9
Music/sounds	1
Views of sky/clouds	6
Space to walk around	1
Quietness	1
Light and airy	3
Nature	1
Shadows	1
Small spaces (positive) large spaces (negative)	2
Un-confusing	2
Cosiness	6
Futuristic/modern	2

Activities	Frequency
Touching things	2
Tidying up	2
Running outside	3
Picnic	1
Football/basketball	3
Lie down	4
Writing	1
Playing	3
Dancing	1
Bring friends	3
Eat	5
Paint	1
Play computer games	1
Look at trees	1
Listen to music	2
Hiding (but not spying)	1
Talking	1
Reading	3

Activities	**Frequency**
Sleeping	5
Watch television	5
Go through doors	2
Paint	1
Climb	1
Play ping-pong	1
Sit on the grass	1

Design Features	**Frequency**
Walls	5
Soft furniture (sofas/beds)	13
Books	2
Lights	17
Windows (big)	19
Place to rest	1
Television	8
Tables	11
Chairs	12
Plasma screen	1
Computer	4
Trees	3
Smartboard	3
Signs (To help find your way around)	1
Drawers and cupboards (Tidy)	2
Wood (Natural)	1
Water	2
Flowers and plants	4
Statue	1
Lap-tops	2